

mobility is the predisposing cause. The exciting cause is the pull of bands and ligaments. Waugh has successfully treated formed ulcers of stomach and duodenum by colopexy only. The problem of dealing actively with the ulcer is still before us, for the majority of ulcers have progressed so far that natural repair cannot be expected. Gastro-enterostomy is a most valuable operation, but has been very much abused. The clear indications for its performance are: Gastric stasis due to organic obstruction of the stomach; an ulcer of the stomach or duodenum which may be afforded rest and allowed to heal by a short-circuiting of the food path. The absolute contraindication is an atonic dilated stomach. The author has found that the further from the cardiac end and the nearer to the duodenum the ulcer was situated the better were the final results. The final results of simple excision are disappointing and cannot be compared with those of partial gastrectomy, for excision has a higher mortality, is a difficult performance and often leaves a deformed hour-glass stomach. Partial gastrectomy has excellent final results. It removes an ulcer especially prone to malignant change. Two cases in the routine examination of the specimens showed early carcinoma. It is more certain to cure symptoms than gastro-enterostomy alone. The operation the author employed for partial gastrectomy is essentially the Billroth II method. Complete abdominal exploration was attempted in every case with special search for right iliac fossa abnormalities. The appendix was taken routinely. Cholecystectomy was done in three cases for gall-stones.

A Note on the Treatment of Secondary Hemorrhage from Branches of the Common Carotid Artery.—BLAIR (*Ann. Surg.*, 1921, lxxiv, 373) says that secondary hemorrhage of the carotid artery and its branches is to be prevented by not suturing wounds that extend through the floor of the mouth and by packing or freely draining all wounds in the neck above the level of the thyroid cartilage that contain a ligated primary branch of the carotid artery. Secondary hemorrhage from a ligated primary branch might possibly be controlled by previously having placed the ligature as far from the carotid as possible and when bleeding actually occurs to free the stump from the surrounding indurated tissues and secondarily to ligate any branches that are given off proximal to this ligature and if necessary to loosely religate the stump itself as far from its origin as possible. If it is found necessary to place the ligature on the bleeding stump so close to the external carotid as to preclude the formation of a proximal clot, then the external carotid itself should be exposed and a ligature placed on each branch and on the trunk at least an inch from the bifurcation in the hope of establishing a permanent clot in the external carotid itself.

Gunshot Injuries to the Brain.—SWANBERY (*Am. Jour. Roent.*, 1921, iii, 445) says that 3 of 11 cases reported died. Four cases had been operated upon, the foreign bodies removed. Three died from meningitis, giving an operative mortality of 75 per cent. Of the 8 living cases, 7 still have foreign bodies in the brain and 5 of these have Jacksonian epileptic attacks. The 1 patient who lived, following the removal of the foreign body has had no convulsions. All the cases except 1, however, complain of headaches or vertigo. About half the cases have paresthesia at times in the formerly para-

lyzed parts, although the paralysis itself has disappeared in most of the cases. The special symptoms are due to the traumatized portion of the brain through which the foreign body has passed to reach its final place.

The Value of the Various Methods of Bone Grafting Judged by 1930 Cases.—McWILLIAMS (*Ann. Surg.*, 1921, lxxiv, 286) says that there are three requirements for a successful bone graft; bridging of the defect; size and type capable of reestablishing the circulation and stimulus to osteogenesis. The osteoperiosteal method offers a very large area of raw bone, hence it is to be preferred to all other methods of grafting. From a study of 1930 bone graftings the author concludes that the bony defect should be filled in with small bone chips and on one or two aspects, overlapping the ends of the fragments, covering in the bone chips, should be placed one or two strips of periosteum with adherent osseous plaques, taken from another bone. This method is applicable to large as to small bony defects. The cause of many non-successes is due to ineffective immobilization or to undue curtailment of its duration. From four to six months' immobilization is ordinarily required for complete success. There is sufficient evidence to prove that the most effectual treatment of non-union of fractures is bone-grafting. Despite some opinions to the contrary, bone-grafting should not be performed in infected fields. The causes of failure in bone graftings are improper methods of grafting, suppuration, insufficient immobilization, fracture and dislocation of the grafts, and atrophy of the ends of the bone to be grafted. The author states that the intramedullary method of grafting should be discarded.

Old Os Calcis Fractures.—COTTON (*Ann. Surg.*, 1921, lxxiv, 294) says that os calcis fractures are of interest because they give so large a percentage of cripples and because these cripples are strong men as a rule in youth or vigorous middle age. The author judges that total disability for real work seems to be the fate of something like one-third to one-half the cases. He lays more emphasis upon remodelling than impaction for the resulting impaction is not mechanically first-rate as a rule. The treatment essentially has been developed with the idea of clearing away excess bone, on the outer side, removing spurs and limbering up joints by manipulation. The main features are similar in all the author's cases—shortened and flattened heel which is not touched in the repair measure; outward dislocation which calls for section of the calcis behind the post-astragular junction—spurs sometimes outgrowths from an original fragment, sometimes newly grown. They are removed very liberally as are all common osteophytic spurs. In the author's crippled cases the main pathology is the outward broadening due to the shoving outward of the peroneal plate of bone and to bone growth behind it associated with loss of some part of lateral motion constantly. The fracture is a crushing fracture with irregular cleavage lines and unusually massive bone replacement—a broad shapeless bone which has lost all chance of rocking under the astragalus. The key to the whole question is doing enough surgery. In his latter cases he has cleared away all excess bone deep below the cortical layer. In doing this clearing, he cuts across the post-astragular-calcaneal joint, regardless of ligaments and of joint capsule.